EFFICIENCY AND NOISE LEVEL CERTIFICATIONS

Anex

Seasonic SSR-1000PD Ultra

Lab ID#: 283
Receipt Date: -
Test Date: -

Report:
Report Date: Jan 25, 2018

DUT INFORMATION

Brand	Seasonic
Manufacturer (OEM)	Seasonic
Series	Prime Platinum Ultra
Model Number	SSR-1000PD Ultra
Serial Number	R1709AA183740034
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	13-6.5
Rated Frequency (Hz)	50-60
Rated Power (W)	1000
Type	ATX12V
Cooling	135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	83	3	0.3
	Watts	125		996	15	3.6
Total Max. Power (W)		1000				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18-22AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (680mm+80mm)	4	8	18AWG	No
SATA (400mm+110mm+110mm+110mm)	2	8	18AWG	No
SATA (350mm+150mm+150mm+150mm)	1	4	18AWG	No
4 pin Molex (450mm+120mm+120mm)	1	3	18AWG	No
4 pin Molex (350mm+120mm)	1	2	18AWG	No
4-pin Molex Adapter / SATA (150mm+150mm)	1	2	18AWG	No
FDD Adapter (+100mm)	1	1	22AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	-

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

Anex

Seasonic SSR-1000PD Ultra

RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	92.936
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	78.913
Standby Power Consumption (W) -115V	0.0542390
Standby Power Consumption (W) -230V	0.0842123
Average PF	0.957
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	29.62
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A-

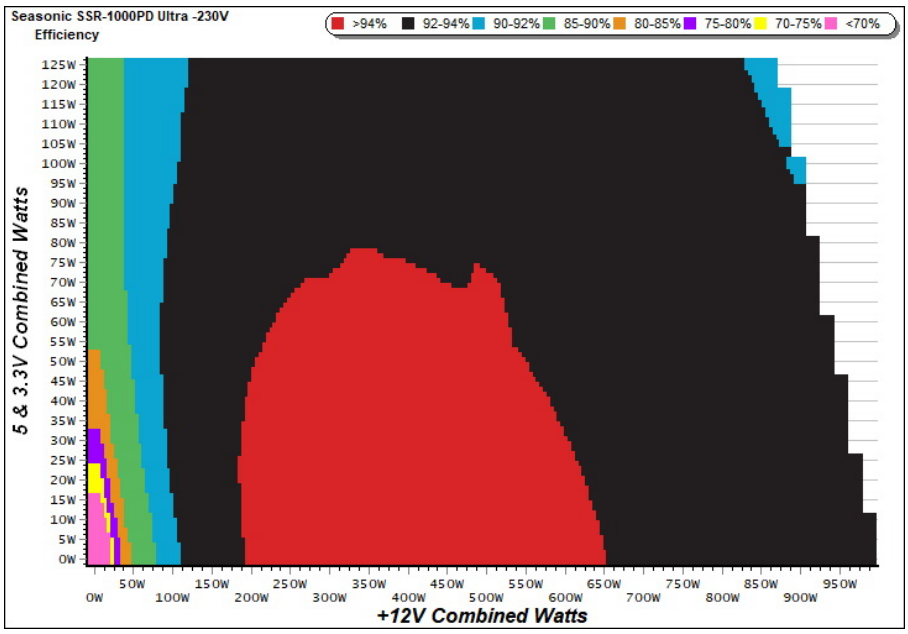
TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

Anex

Seasonic SSR-1000PD Ultra

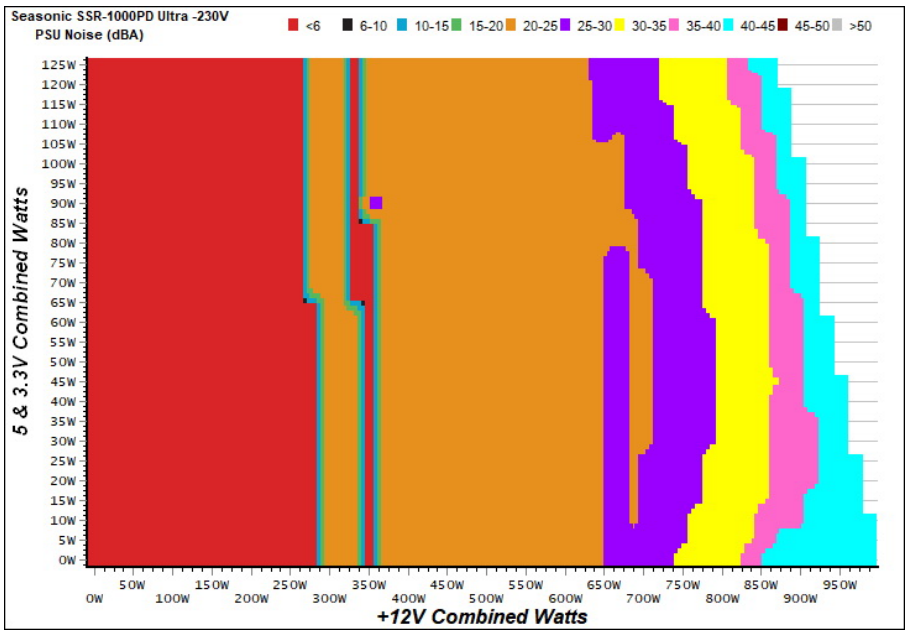
EFFICIENCY GRAPH



INFO

This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

NOISE GRAPH



INFO

The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Anex

Seasonic SSR-1000PD Ultra

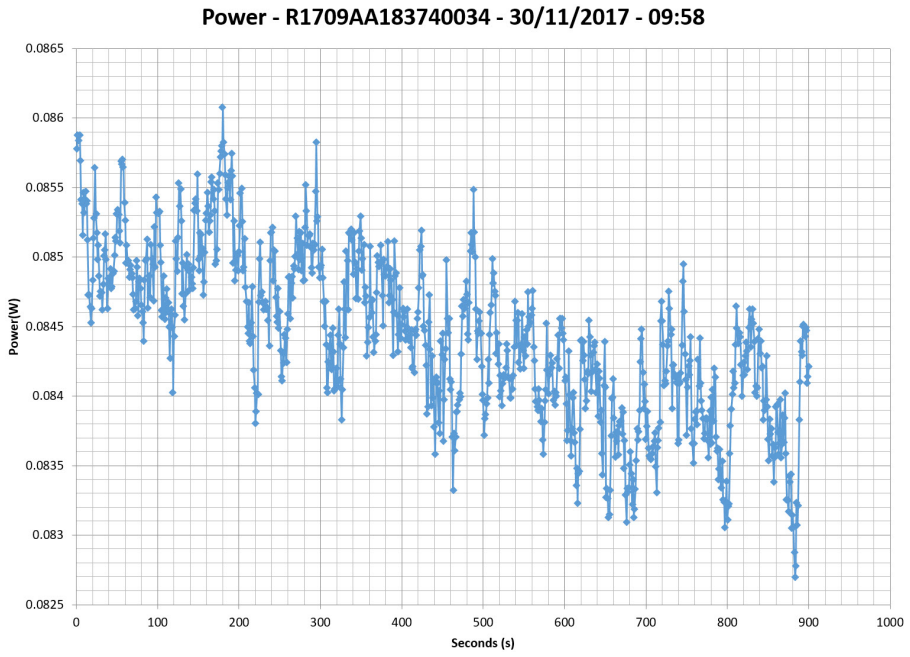
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.211	65.938%	0.034
	5.001V	0.320		115.02V
2	0.088A	0.439	73.167%	0.063
	5.000V	0.600		115.03V
3	0.543A	2.703	80.590%	0.268
	4.982V	3.354		115.02V
4	1.003A	4.976	80.950%	0.363
	4.963V	6.147		115.02V
5	1.502A	7.422	80.151%	0.417
	4.942V	9.260		115.02V
6	3.002A	14.667	79.371%	0.485
	4.886V	18.479		115.02V

5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.211	59.104%	0.012
	5.001V	0.357		230.12V
2	0.088A	0.438	68.438%	0.021
	4.999V	0.640		230.14V
3	0.543A	2.702	78.251%	0.105
	4.980V	3.453		230.12V
4	1.002A	4.974	79.597%	0.174
	4.962V	6.249		230.13V
5	1.502A	7.421	79.830%	0.232
	4.941V	9.296		230.13V
6	3.002A	14.639	79.185%	0.335
	4.877V	18.487		230.13V

VAMPIRE POWER -230V



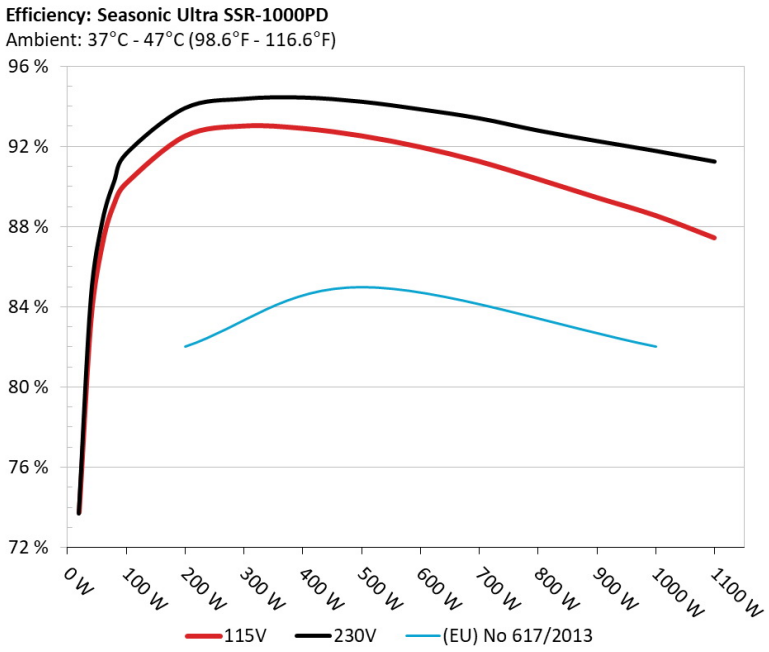
INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

Anex

Seasonic SSR-1000PD Ultra

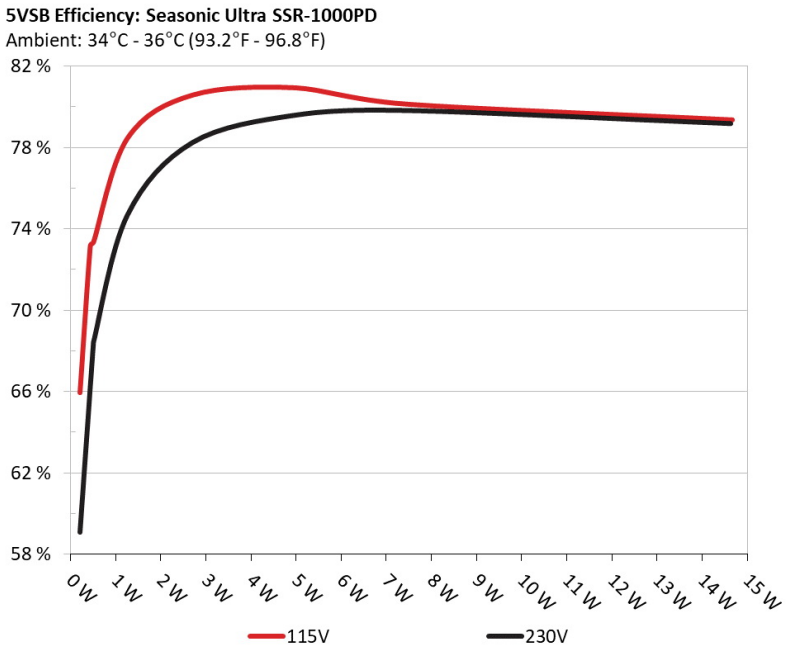
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



INFO

The PSU`s efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5VSB EFFICIENCY



INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

Anex

Seasonic SSR-1000PD Ultra

10-110% LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	6.390A	1.987A	1.975A	0.998A	99.925	91.623%	0	<6.0	46.78°C	0.830
	12.259V	5.029V	3.341V	5.010V	109.061				38.16°C	230.77V
2	13.764A	2.982A	2.963A	1.199A	199.610	93.894%	0	<6.0	47.67°C	0.926
	12.258V	5.028V	3.340V	5.006V	212.590				38.57°C	230.70V
3	21.469A	3.480A	3.443A	1.400A	299.099	94.357%	567	22.2	40.57°C	0.957
	12.255V	5.028V	3.339V	5.002V	316.986				49.98°C	230.65V
4	29.248A	3.978A	3.955A	1.601A	399.509	94.422%	567	22.2	41.24°C	0.970
	12.251V	5.026V	3.337V	4.997V	423.110				51.08°C	230.65V
5	36.666A	4.974A	4.946A	1.803A	499.626	94.216%	670	25.1	41.84°C	0.978
	12.249V	5.026V	3.336V	4.994V	530.300				52.18°C	230.57V
6	44.093A	5.970A	5.938A	2.004A	599.759	93.835%	910	30.8	42.56°C	0.983
	12.246V	5.025V	3.334V	4.990V	639.162				53.30°C	230.50V
7	51.490A	6.968A	6.932A	2.206A	699.498	93.388%	1275	41.7	43.06°C	0.987
	12.243V	5.024V	3.332V	4.987V	749.024				54.05°C	230.46V
8	58.956A	7.963A	7.924A	2.408A	800.016	92.776%	1808	48.6	44.15°C	0.988
	12.240V	5.023V	3.331V	4.984V	862.308				55.51°C	230.43V
9	66.744A	8.463A	8.409A	2.408A	899.308	92.258%	2132	51.7	44.59°C	0.988
	12.238V	5.022V	3.329V	4.984V	974.773				56.26°C	230.36V
10	74.380A	8.960A	8.924A	3.019A	999.737	91.761%	2132	51.7	45.62°C	0.989
	12.235V	5.022V	3.328V	4.969V	1089.502				57.84°C	230.28V
11	82.570A	8.964A	8.925A	3.020A	1099.784	91.230%	2132	51.7	46.62°C	0.990
	12.233V	5.021V	3.327V	4.968V	1205.510				59.65°C	230.24V
CL1	0.731A	15.001A	15.000A	0.000A	134.548	88.587%	910	28.4	44.58°C	0.883
	12.262V	5.029V	3.343V	5.068V	151.883				52.52°C	230.86V
CL2	82.999A	1.001A	0.998A	1.000A	1028.676	91.916%	2132	51.7	46.12°C	0.989
	12.233V	5.023V	3.328V	5.000V	1119.148				57.53°C	230.27V

Anex

Seasonic SSR-1000PD Ultra

20-80W LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.166A	0.495A	0.476A	0.199A	19.379	73.701%	0	<6.0	0.465
	12.259V	5.033V	3.344V	5.029V	26.294				230.82V
2	2.408A	0.995A	0.986A	0.398A	39.818	84.423%	0	<6.0	0.634
	12.259V	5.030V	3.342V	5.022V	47.165				230.81V
3	3.581A	1.489A	1.463A	0.598A	59.284	88.231%	0	<6.0	0.726
	12.260V	5.030V	3.342V	5.019V	67.192				230.79V
4	4.820A	1.987A	1.974A	0.798A	79.682	90.256%	0	<6.0	0.786
	12.259V	5.030V	3.342V	5.015V	88.284				230.79V

RIPPLE MEASUREMENTS

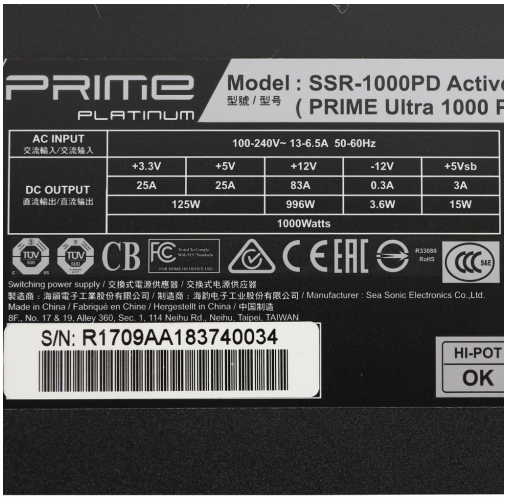
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.4 mV	4.2 mV	5.0 mV	2.3 mV	Pass
20% Load	9.3 mV	5.1 mV	6.7 mV	3.4 mV	Pass
30% Load	11.9 mV	5.6 mV	7.3 mV	3.8 mV	Pass
40% Load	10.0 mV	4.8 mV	6.8 mV	3.5 mV	Pass
50% Load	9.5 mV	5.6 mV	7.2 mV	4.1 mV	Pass
60% Load	10.7 mV	6.5 mV	7.8 mV	5.0 mV	Pass
70% Load	12.8 mV	7.4 mV	7.9 mV	5.4 mV	Pass
80% Load	13.9 mV	7.2 mV	9.6 mV	5.9 mV	Pass
90% Load	15.8 mV	7.3 mV	9.8 mV	6.5 mV	Pass
100% Load	16.4 mV	8.5 mV	10.7 mV	7.5 mV	Pass
110% Load	18.0 mV	8.0 mV	11.0 mV	7.9 mV	Pass
Crossload 1	8.3 mV	8.7 mV	11.1 mV	4.5 mV	Pass
Crossload 2	17.1 mV	5.2 mV	7.0 mV	6.7 mV	Pass

Anex

Seasonic SSR-1000PD Ultra

HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	31.12
AC Loss to PWR_OK Hold Up Time (ms)	28.02
PWR_OK Inactive to DC Loss Delay (ms)	3.10

Top side



Power specifications label

CERTIFICATIONS